

What is claimed is:

1. A system for displaying a map in a display unit of a mobile terminal device, comprising:

a terminal detector for detecting if the mobile terminal device exists in a first region on a path;

a transmitter for transmitting map data representing a map of and around the first region to the mobile terminal device when the terminal detector detects that the mobile terminal device exists in the first region;

a receiver for receiving the map data from the transmitter; and

a controller for causing the display unit to display the map based on the map data received by the receiver such that a top of the map is aligned with a top of the display unit.

2. The system according to claim 1, wherein the transmitter transmits the map data formatted such that the top of the displayed map is aligned with the moving direction of the mobile terminal device.

3. The system according to claim 1, wherein the path includes a route of an elevator in a building, the terminal detector includes a unit for determining the first region in accordance with a floor at which the elevator will stop, and the transmitter transmits to the mobile terminal device map data of the floor at which the elevator will stop.

4. The system according to claim 3, wherein the terminal detector includes a module for determining another region in

accordance with another floor at which the elevator will stop next, and the transmitter transmits to the mobile terminal device map data of the another floor at which the elevator will stop next.

5. The system according to claim 1 further including a direction detector for detecting a direction of the mobile terminal device, wherein the controller converts the map data on the basis of the direction of the mobile terminal device detected by the direction detector such that a top of the map displayed in the display unit is always directed in a certain direction regardless of the direction of the mobile terminal device.

6. The system according to claim 5, wherein the direction detector includes a geomagnetic sensor provided operatively coupled to the mobile terminal device.

7. The system according to claim 5, wherein the direction detector includes a plurality of elements on a surface of the mobile terminal device, a camera for photographing shadows made by the plurality of elements and a calculator for calculating the direction of the mobile terminal device on the basis of the photographed shadows.

8. The system according to claim 1, wherein the transmitter and receiver are in compliance with the Bluetooth standard.

9. The system according to claim 1, wherein the terminal detector has a directional antenna for the first region to detect a radio signal issued from the mobile terminal device.

10. A host device for transmitting map data to a mobile terminal device, comprising:

a terminal detector for detecting if the mobile terminal device exists in a first region on a path; and

a transmitter for transmitting map data representing a map of and around the first region to the mobile terminal device when the terminal detector detects that the mobile terminal device exists in the first region.

11. The host device according to claim 10, wherein the transmitter transmits the map data such that a top of the displayed map is aligned with a moving direction of the mobile terminal device along the path.

12. The host device according to claim 10, wherein the path includes a route of an elevator in a building, the terminal detector includes a unit for determining the first region in accordance with a floor at which the elevator will stop, and the transmitter transmits to the mobile terminal device map data of the floor at which the elevator will stop.

13. The host device according to claim 12, wherein the terminal detector includes a module for determining another region in accordance with another floor at which the elevator will stop next, and the transmitter transmits to the mobile terminal device map data of the another floor at which the elevator will stop next.

14. The host device according to claim 10, wherein the transmitter is in compliance with the Bluetooth standard.

15. The host device according to claim 10, wherein the

terminal detector has a directional antenna for the first region to detect a radio signal issued from the mobile terminal device.

16. A method of displaying a map in a display unit of a mobile terminal device, comprising the steps of:

A) detecting if the mobile terminal device exists in a first region on a path;

B) transmitting map data representing a map of and around the first region to the mobile terminal device when existence of the mobile terminal device in the first region is detected in Step A;

C) receiving the map data; and

D) causing the display unit to display the map based on the map data received at Step C such that a top of the displayed map is aligned with a moving direction of the mobile terminal device along the path.

17. A system for displaying a map in a display unit of a mobile terminal device, comprising:

a first terminal detector for detecting if the mobile terminal device exists in a first region on a path;

a second terminal detector for detecting if the mobile terminal device exists in a second region other than the first region on the path;

a first transmitter for transmitting first map data representing a first map of and around the first region to the mobile terminal device when the first terminal detector detects that the mobile terminal device exists in the first region;

a second transmitter for transmitting second map data

representing a second map of and around the second region to the mobile terminal device when the second terminal detector detects that the mobile terminal device exists in the second region;

a receiver for receiving the first map data from the first transmitter and the second map data from the second transmitter; and

a controller for causing the display unit to display one of the first and second maps based on one of the first and second map data received by the receiver such that a top of the displayed first or second map is aligned with a moving direction of the mobile terminal device along the path.

18. The system according to claim 17, wherein when the receiver receives the first and second map data at different times within a predetermined period, the controller ignores one of the first and second map data which is received later than the other, and causes the display unit to keep displaying one of the first and second maps based on the map data received earlier.

19. The system according to claim 17, wherein the first map data is formed such that a top of the displayed first map is aligned with a direction from the first region to the second region along the path, and the second map data is formed such that a top of the displayed second map is aligned with a direction from the second region to the first region.

20. The system according to claim 17, wherein the path bends between the first and second regions,

wherein when the second terminal detector detects presence of the mobile terminal device in the second region after the first terminal detector detects presence of the mobile terminal device in the first region, the controller converts the first map data on the basis of a degree of bending of the path such that a top of the display unit is aligned with a direction from a bending point of the path to the second region, and

wherein when the first terminal detector detects presence of the mobile terminal device in the first region after the second terminal detector detects presence of the mobile terminal device in the second region, the controller converts the second map data on the basis of the degree of bending of the path such that the top of the display unit is aligned with a direction from a bending point of the path to the first region.

21. A host device for transmitting map data to a mobile terminal device, comprising:

a first terminal detector for detecting if the mobile terminal device exists in a first region on a path;

a second terminal detector for detecting if the mobile terminal device exists in a second region other than the first region on the path;

a first transmitter for transmitting first map data representing a first map of and around the first region to the mobile terminal device when the first terminal detector detects that the mobile terminal device exists in the first region; and

a second transmitter for transmitting second map data

representing a second map of and around the second region to the mobile terminal device when the second terminal detector detects that the mobile terminal device exists in the second region.

22. The host device according to claim 21, wherein the second transmitter does not transmit the second map data to the mobile terminal device when the second terminal detector detects presence of the mobile terminal device in the second region in a predetermined period after the first terminal detector detects presence of the mobile terminal device in the first region.

23. The host device according to claim 21, wherein the first transmitter does not transmit the first map data to the mobile terminal device when the first terminal detector detects presence of the mobile terminal device in the first region in a predetermined period after the second terminal detector detects presence of the mobile terminal device in the second region.

24. The host device according to claim 21, wherein the first and second transmitters are in compliance with the Bluetooth standard.

25. The host device according to claim 21, wherein the first terminal detector has a directional antenna for the first region to detect a radio signal issued from the mobile terminal device in the first region, and the second terminal detector has a directional antenna for the second region to detect a radio signal issued from the mobile terminal device in the second

region.

26. A method of displaying a map in a display unit of a mobile terminal device, comprising the steps of:

A) detecting if the mobile terminal device exists in a first region on a path;

B) detecting if the mobile terminal device exists in a second region other than the first region on the path;

C) transmitting first map data representing a map of and around the first region to the mobile terminal device when presence of the mobile terminal device in the first region is detected in Step A;

D) transmitting second map data representing a map of and around the second region to the mobile terminal device when presence of the mobile terminal device in the second region is detected in Step B; and

E) receiving at least one of the first and second map data and causing the display unit to display the map based on the received map data such that a top of the displayed map is aligned with a moving direction of the mobile terminal device along the path.

27. A mobile terminal device comprising:

a display unit;

a receiver for receiving map data;

a controller for causing the display unit to display a map based on the map data received by the receiver; and

a direction detector for detecting a direction of the mobile terminal device, wherein the controller converts the



received map data on the basis of the direction of the mobile terminal device detected by the direction detector such that the displayed map is always directed in a particular direction regardless of the direction of the mobile terminal device.

28. The mobile terminal device according to claim 27, wherein the direction detector includes a geomagnetic sensor.

29. The mobile terminal device according to claim 27, wherein the direction detector includes a plurality of elements on a surface of the mobile terminal device, a camera for photographing shadows made by the plurality of elements and a calculator for calculating the direction of the mobile terminal device on the basis of the photographed shadows.

30. The mobile terminal device according to claim 27, wherein the receiver is in compliance with the Bluetooth standard.

31. A mobile terminal device comprising:

a display unit;

a receiver for receiving map data; and

a controller for causing the display unit to display a map based on the map data received by the receiver, wherein when the receiver receives first map data of a first cell within a predetermined period after receiving second map data of a second cell other than the first cell, the controller ignores the first map data and causes the display unit to keep displaying the map based on the second map data.

32. The mobile terminal device according to claim 31, wherein the receiver is in compliance with the Bluetooth

standard.

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